Distribution and Abundance of Larval Sablefish *(Anoplopoma fimbria)* in the Surface Waters off the West Coast of Vancouver Island, April 16 to May 10, 1984

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DISTRIBUTION AND ABUNDANCE OF LARVAL SABLEFISH (*Anoplopoma fimbria*) IN THE SURFACE WATERS OFF THE WEST COAST OF VANCOUVER ISLAND, APRIL 16 TO MAY 10, 1984

by

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ABSTRACT

Shaw, W., G. A. McFarlane, D. Davenport, and W. T. Andrews. 1985. Distribution and abundance of larval sablefish (Anoplopoma fimbria) in the surface waters off the west coast of Vancouver Island, April 16 to May 10, 1984. Can. MS Rep. Fish. Aquat. Sci. 1835: 41 p.

The distribution and abundance of larval sablefish in the surface waters was examined during a neuston net survey from April 16 to May 10, 1984 off the west coast of Vancouver Island and in Queen Charlotte Sound. A total of 714 sablefish larvae were caught in night tows and 8 in day tows. They composed 19.4% of the total catch of larvae and occurred at 76.6% of the night stations. Sablefish larvae were predominantly caught along the west coast of Vancouver Island at stations positioned between the 200 and 2000 m depth contours. Most of the sablefish (38.7%) were caught off Nootka Sound. Abundance estimates of sablefish from single tow samples collected throughout the survey area ranged from 3.2-586.3 larvae/1000 m^3.

Sablefish ranged in length from 8-38 mm with a mean length of 16.6 mm. Ninety-four percent ranged in length from 11-26 mm.

Other larval species caught during this survey are also discussed in this report.

Key words: Sablefish larvae, distribution, abundance, neuston net, Vancouver Island

RÉSUMÉ

Shaw, W., G. A. McFarlane, D. Davenport, and W. T. Andrews. 1985. Distribution and abundance of larval sablefish (Anoplopoma fimbria) in the surface waters off the west coast of Vancouver Island, April 16 to May 10, 1984. Can. MS Rep. Fish. Aquat. Sci. 1835: 41 p.

Au cours d'un relevé du neuston par traits de filet mené du 16 avril au 10 mai 1984, on a étudié la répartition et l'abondance des larves de morue charbonnière dans les eaux superficielles du bassin Reine-Charlotte et au large de la côte ouest de l'île Vancouver. Au total, 714 larves ont été capturées au cours de traits nocturnes et 8, dans des traits diurnes. Présentes à 76,6% des stations nocturnes, elles constituaient 19,4% des prises totales de larves. Les morues charbonnières larvaires ont surtout été capturées le long de la côte ouest de l'île Vancouver à des stations situées entre les isobathes de 200 et 2000 m. La plupart (38,7%) ont été prises au large de la baie Nootka. Les estimations de l'abondance de la morue charbonnière réalisées à partir d'échantillons recueillis au cours de traits simples dans toute la zone expérimentale variaient de 3,2 à 586,3 larves par 1000 m^3.

La longueur des morues charbonnières allait de 8 à 38 mm (longueur moyenne = 16,6 mm); 94% mesuraient de 11 à 26 mm.

Le présent rapport porte aussi sur les autres espèces larvaires capturées au cours du relevé.

Mots-clés: morue charbonnière larvaire, répartition, abondance, filet à neuston, île Vancouver

INTRODUCTION

The Groundfish Program of the Pacific Biological Station conducted a neuston plankton survey off the west coast of Vancouver Island and in southern Queen Charlotte Sound from April 16 to May 10, 1984. This survey was designed to determine the distribution and relative abundance of sablefish (Anoplopoma fimbria) larvae in the surface waters. The results from the survey will provide background information on the early life history of sablefish and will be used for growth studies.

This report summarizes the catch statistics of sablefish larvae and includes information on distribution and relative abundance. Preliminary information on distribution and relative abundance of other species is also presented.

MATERIALS AND METHODS

The R/V G.B. REED was used for the survey. The survey area extended from southern Barkley Sound to Quatsino Sound (six transects) off the west coast of Vancouver Island; and to Goose Island Gully (1 transect) in Queen Charlotte Sound. The transects were laid out roughly perpendicular to the bottom contours. The transects along Vancouver Island extended from 4 M (7.4 km) to 50 M (92.7 km) from shore and the stations were spaced approximately 5 M (9.3 km) apart. In Queen Charlotte Sound the stations were spaced approximately 12 M (22.2 km) apart. Additional stations were selected between the transects. Two neuston tows were completed at most stations. All the tows were completed at night with the exception of some stations off Vancouver Island where daylight tows were also conducted. Expendable bathythermograph (XBT) casts were taken along six transects off the west coast of Vancouver Island.

The neuston sampler, a modification of the Sameoto samplers (Sameoto and Jaroszynski 1969), is 45 cm high x 45 cm wide with a 500 µm mesh Nitex net. The codend was PVC with a 351 µm stainless steel mesh window. A flow meter was attached in the mouth of the sampler to determine the volume of water filtered by the net during each tow. The duration of each tow was 15 minutes at a speed of 3 knots. The recovered net was thoroughly washed down with a deck hose and the catch was preserved in 5 percent buffered seawater formaldehyde. A cursory examination of the catch was done for each tow to identify larval sablefish.

Near the end of the survey, live sablefish larvae were collected alive and transported to the Pacific Biological Station as part of a study assessing growth of larval fish. The results from this experiment will be presented in another report.

Preserved samples from each tow were individually sorted to remove all fish larvae and fish eggs. Larvae were identified to the lowest taxonomic level possible and counted. Fish eggs were also counted. Sablefish larvae longer than 15 mm were measured for fork length (mm) since bifurcation in the tail fin was starting to become noticeable; larvae 15 mm and smaller were measured for total length (mm). In this report all measurements are referred to as fork length. Subsequent preserving of all larvae and eggs was in 70 percent isopropanol.

Relative abundance (R), expressed as mean number per 1000 m^3 was estimated in the following manner:

$$R = (1000 \div [D \times A])\ N$$

where A = mouth area of the neuston net (0.203m^2) and N = number of larvae per tow,

and

$$D = \frac{(T_2 - T_1) \times R_c}{999999}$$

where D = distance net travelled, T_1 and T_2 are the flow meter counts recorded at the start and end of a tow, respectively, and R_c is the ratio constant of the flow meter. During this survey a low velocity rotor (constant value of 51020) was used.

Relative abundance (mean number per 1000 m^3) was also estimated for sablefish, Pacific herring (Clupea harengus pallasi), lingcod (Ophiodon elongatus), lemon sole (Parophrys vetulus), and rockfish (sp.) (Sebastes). Subsequent preserving of all larvae and eggs was in 70 percent isopropanol.

RESULTS

SURVEY OVERVIEW

A total of 47 stations were fished during the survey (Fig. 1). Forty-seven stations were occupied at night; 42 off Vancouver Island and 5 in Queen Charlotte Sound. Twelve stations were reoccupied in daylight hours; 10 off Vancouver Island (Quatsino and Nootka Sound transects) and 2 in Queen Charlotte Sound. The positions of each tow are listed in Appendix Table 1. Expendable bathythermograph (XBT) casts were made at 25 of these stations. In addition, only XBT casts were made at 6 stations (Table 1). A total of 122 tows were made during the survey; 98 night tows, 20 daylight tows along Vancouver Island and 4 daylight tows in Queen Charlotte Sound.

A list of the common and scientific names of larval fish collected during the survey is given in Table 2. A total of 5544 fish larvae were captured, 5298 larvae in night tows and 246 in day tows. Seventy-six fish larvae were not identified (Table 3). Larval species caught during the night tows in order of abundance were Irish Lord (sp.) (Hemilepidotus (sp.)) (26.7%), Pacific sand lance (Ammodytes hexapterus) (19.4%) and sablefish, (13.5%) (Table 3). The most abundant larval species caught during the daylight tows were sculpin (sp.) (Cottidae) (63.4%), Pacific sandlance (30.5%) and sablefish (3.3%).

The most common larval fish caught in the night tows were sculpin (sp.), occurring at 78.7%, sablefish at 76.6% and greenling (sp.) (Hexagrammidae) at 59.8% of the stations sampled (Table 4). The species occurring in the majority of the daylight tows were sablefish (33.3%), sculpin (sp.) (25.0%) and greenling (sp.) (16.7%).

SABLEFISH

Sablefish larvae were widely distributed throughout the survey area (Fig. 2). A total of 722 larvae (13.0%) were captured during the survey. Almost all of the larvae (714) were captured during night tows (Table 3). Abundance estimates from single tow samples collected throughout the survey area ranged from 3.2-586.3 larvae/1000 m^3 (Appendix table 2). The majority of sablefish larvae were caught along Vancouver Island at stations positioned between the 200 and 2000 m depth contour. Examining the catches by area indicated that most of the sablefish (38.7%) were captured off Nootka Sound. This is reflected in the relatively high numbers captured per station in that area ($\bar{x}$ = 34.5 larvae/stn) which resulted in a relative abundance estimate of 72.0 larvae/1000 m^3 (Table 5).

Sablefish were also abundant off Kyuquot Sound ($\bar{x}$ = 25.0 larvae/stn) and off north Barkley Sound ($\bar{x}$ = 15.4 larvae/stn) but not in Queen Charlotte Sound ($\bar{x}$ = 2.0 larvae/stn) (Table 5; Fig. 2).

A total of eight larvae were captured during the daylight tows; one in Queen Charlotte Sound and seven off Quatsino Sound. Off Quatsino Sound the night tow estimates averaged 10 times the day tow estimates for the same stations (Table 5). No larvae were caught in the day tows completed off Nootka Sound.

Sablefish larvae ranged in length from 8-38 mm with a mean length of 16.6 mm (Table 6; Fig. 3). The majority (94.0%) of the larvae ranged in length from 11-26 mm. Larval mean lengths by area were 16.7 mm in south Barkley Sound, 17.4 mm in north Barkley Sound, 20.1 mm in Clayoquot Sound, 15.6 mm in Nootka Sound, 15.7 mm in Kyuquot Sound, 17.8 mm in Quatsino Sound and 14.8 mm in Queen Charlotte Sound (Table 6). The size composition of sablefish larvae reported in ichthyoplankton surveys off the west coast of Washington to northern California was similar (Kendall and Clark 1982), (Clarke 1984).

OTHER FISH LARVAE

Pacific herring larvae were common but not abundant throughout the survey area with large catches close to the shoreline off Vancouver Island (Fig. 4). A total of 453 larvae were caught composing 8.6% of the total catch (nos.) of fish larvae (Table 3). All larvae were captured in 34.0% of the stations sampled (Table 4). No larvae were caught in the daylight tows. The largest catch was 274 larvae (60.5%) at stn. 25 off Nootka Sound. Abundance estimates from the night tows ranged from 2.7-758.3 larvae/1000 m^3 (Appendix table 3).

Lingcod larvae were distributed throughout the survey area (Fig. 4). A total of 104 larvae were caught composing 2.0% of the total catch and occurred in 29.8% of the stations sampled (Tables 3 and 4, respectively). Most (40.3%) of the lingcod were caught in the south Barkley Sound area (Fig. 4). Six larvae were caught in two day tows completed off Nootka Sound. Abundance estimates ranged from 3.4-118.5 larvae/1000 m^3 (Appendix table 3).

Lemon sole larvae were caught in small numbers off Vancouver Island between Kyuquot Sound and south Barkley Sound (Fig. 5). A total of 61 larvae were caught composing 1.2% of the total catch and occurred at 34.0% of the stations sampled (Tables 3 and 4, respectively). Only one larva was caught in a day tow off Nootka Sound. Abundance estimates ranged from 3.1-30.4 larvae/1000 m^3 (Appendix table 4).

Rockfish larvae were caught in small abundance mostly off Vancouver Island between the 200 and 2000 m depth contour (Fig. 5). A total of 9 larvae were caught composing 0.2% of the total catch and occurred at 10.6% of the stations sampled (Tables 3 and 4, respectively). The majority (5) of the larvae were caught at stn. 34 off Kyuquot Sound. Abundance estimates ranged from 1.9-18.2 larvae/1000 m^3 (Appendix table 4).

Catches of other larvae of 12 different taxa, having no commercial importance, are presented in Appendix table 5. Irish Lord (sp.) larvae were the most abundant in the survey and the majority (58.1%) were caught off Kyuquot Sound and in Queen Charlotte Sound (30.6%).

Fish eggs were common and occurred at 72.3% of the stations sampled.

SEA TEMPERATURE PROFILES

Water temperature profiles were recorded at 31 stations during the survey (Fig. 1). A summary of the temperature profiles by depth interval is in Table 6. The surface temperatures during the survey ranged from 9.1-10.3°C and averaged 9.7°C. It is of interest to note that there was no correlation ($P < 0.001$) between catches of sablefish larvae and with the surface temperatures during this survey.

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Table 1. Temperatures (°C) determined from expendable bathythermograph readings taken at designated oceanographic stations. R/V G.B. REED, April 16-30, 1984.

Stn. no.	Day/ month	Time (PDT)	Latitude		Longitude		Standard depths (m)											Bottom	
							0	10	20	30	50	75	100	150	200	250	300	400	°C	(m)
1	17/4	1925	48	39.0	125	02.5	10.3	10.1	9.4	8.8	8.6								8.6	57
2	17/4	2000	48	36.6	125	09.0	10.1	9.5	9.3	9.2	9.3	8.6	8.6						8.3	115
3	17/4	2031	48	32.2	125	15.5	9.8	9.6	9.5	9.4	9.4	9.0	8.1						7.9	112
4	17/4	2215	48	28.9	125	21.8	10.3	9.8	9.4	9.4	9.3	8.7	8.0	7.3					7.3	155
5	17/4	2305	48	25.5	125	28.3	9.9	9.8	9.7	9.4	9.3	9.1	8.4						7.7	131
6	19/4	1843	48	22.0	125	34.7	10.0	9.5	9.4	9.3	9.3	8.7	8.3	7.4					7.4	152
7	19/4	1935	48	18.6	125	41.2	10.0	9.6	9.5	9.4	9.3	9.0	8.4	7.7					7.7	154
8	19/4	2120	48	15.1	125	47.7	9.8	9.7	9.4	-	9.0	-	8.7	7.7	7.2				6.6	235
9	19/4	2200	48	10.6	125	56.2	10.0	9.8	9.8	9.7	9.6	9.3	8.7	7.5	7.1	6.6	6.3	5.7	4.8	1000
11	20/4	1856	48	53.1	125	36.7	10.2	9.8	9.7	9.6									9.3	43
12	20/4	1940	48	49.2	125	42.0	9.6	9.6	9.6	9.0	9.0	9.0							9.0	75
13	20/4	2142	48	45.4	125	47.4	10.0	9.7	9.6	9.3	9.3								9.2	60
14	20/4	2230	48	41.2	125	53.0	9.7	9.6	9.5	9.2	9.2								9.2	70
19	21/4	1924	49	10.0	126	11.5	10.1	10.0	9.9	9.8	9.6								9.6	50
20	21/4	2007	49	06.0	126	19.0	10.3	9.6	9.3	9.3	9.4	9.4							9.3	95
21	21/4	2156	49	00.0	126	25.0	9.9	9.7	9.6	9.5	9.3	9.2	8.8						7.8	142
22	21/4	2330	48	56.0	126	31.6	9.8	9.7	9.5	9.5	10.0	10.0	10.2	8.3					7.6	168
23	22/4	0107	48	51.0	126	38.0	9.5	9.4	9.4	9.4	9.3	9.1	8.7	7.4	6.9	6.5	6.0	5.5	5.0	550
24	22/4	1840	49	33.5	126	38.0	9.4	9.4	9.4	9.4	9.3								9.3	70
25	23/4	1045	49	25.5	126	49.0	9.5	9.5	9.5	9.5	9.4	9.2							9.2	82
26	23/4	2055	49	21.0	126	56.0	9.5	9.4	9.4	9.4	9.4	8.9	8.0						7.5	142
27	23/4	2252	49	16.0	127	01.5	9.5	9.4	9.4	9.4	9.3	8.9	8.3	7.3					7.3	168
28	24/4	0131	49	13.5	127	06.0	9.2	9.2	9.2	9.3	9.3	8.9	8.3	7.4	6.7	6.4	6.1	5.7	5.0	428
30	25/4	0300	49	56.0	127	21.2	9.4	9.4	9.3	9.3	9.0								9.0	54
31	25/4	0234	49	51.5	127	25.0	9.3	9.3	9.3	9.3	9.3								8.4	73
32	25/4	0120	49	47.0	127	30.5	9.3	9.4	9.3	9.3	9.3	8.7							7.3	88
33	24/4	2310	49	40.1	127	40.3	9.3	9.3	9.3	9.3	9.0	8.9	8.2	7.5	6.7	6.1	5.7	5.6	4.9	585
35	25/4	1545	50	24.0	128	02.0	9.6	9.2	9.0	9.0	8.8	8.5	8.5						8.5	108
36	25/4	1430	50	21.5	128	06.5	9.4	9.3	9.2	9.2	9.0	7.8							7.3	92
37	25/4	1300	50	18.0	128	12.5	9.1	9.1	9.1	9.1	9.1	8.7	-	-					-	196
38	25/4	1107	50	13.0	128	22.0	9.5	9.3	9.2	9.2	9.2	9.1	8.2	7.3	6.7	6.1	5.7	5.5	5.0	1061

Table 2. Common and scientific names of larval fish captured in the neuston tows. R/V G.B. REED, April 16-May 10, 1984.

Common name	Scientific name
Irish Lord (sp.)	Hemilepidotus sp.
Pacific sand lance	Ammodytes hexapterus
Sablefish	Anoplopoma fimbria
Sculpin (sp.)	Cottidae
Pacific herring	Clupea harengus pallasi
Prickleback (sp.)	Stichaeidae
Lanternfish (sp.)	Myctophidae
Lingcod	Ophiodon elongatus
Greenling (sp.)	Hexagrammidae
Lemon sole	Parophrys vetulus
Smelt (sp.)	Osmeridae
Snailfish (sp.)	Cyclopteridae
Dwarf wrymouth	Lyconectes aleutensis
Cabezon	Scorpaenichthys marmoratus
Poacher (sp.)	Agonidae
Rockfish (sp.)	Scorpaenidae
Gunnel (sp.)	Pholidae
Sand sole	Psettichthys melanostictus

Table 3. Summary of larvae collected in the neuston tows ranked in order of abundance. R/V G.B. REED, April 16-May 10, 1984.

Larvae	Total			
	Number		Percent	
	Night	Day	Night	Day
Irish Lord (sp.)	1414	1	26.7	0.4
Pacific sand lance	1026	75	19.4	30.5
Sablefish	714	8	13.5	3.3
Sculpin (sp.)	565	156	10.7	63.4
Pacific herring	453	0	8.5	0
Prickleback (sp.)	445	1	8.4	0.4
Lanternfish (sp.)	156	0	3.0	0
Greenling (sp.)	105	4	2.0	1.6
Lingcod	104	0	2.0	0
Lemon sole	61	1	1.2	0.4
Smelt (sp.)	52		1.0	
Snailfish (sp.)	38		0.7	
Dwarf wrymouth	31		0.6	
Cabezon	21		0.4	
Poacher (sp.)	12		0.2	
Rockfish (sp.)	9		0.2	
Sand sole	9		0.2	
Gunnel (sp.)	8		0.2	
Unidentified larvae	76		1.5	
Total	5298	246		
Unidentified eggs	1833	292		

Table 4. Rank abundance of larvae occurring in the stations sampled. R/V G.B. REED, April 16-May 10, 1984.

Larvae	Number of stations		Percent occurrence	
	Night	Day	Night	Day
Sculpin (sp.)	37	3	78.7	25.0
Sablefish	36	4	76.6	33.3
Greenling (sp.)	28	2	59.8	16.7
Pacific sand lance	24	1	51.1	8.3
Irish Lord (sp.)	23	1	48.9	8.3
Prickleback (sp.)	17	0	36.2	0
Cabezon	16	0	34.0	0
Lemon sole	16	1	34.0	8.3
Pacific herring	16		34.0	
Snailfish (sp.)	15		31.9	
Lanternfish (sp.)	14		29.8	
Lingcod	14		29.8	
Dwarf wrymouth	10		21.3	
Poacher (sp.)	9		19.1	
Gunnel (sp.)	7		14.9	
Sand sole	6		12.8	
Rockfish (sp.)	5		10.6	
Smelt (sp.)	5		10.6	
Unidentified larvae	18		38.3	
Unidentified eggs	41	12	87.2	100.0

Table 5. Summary of sablefish larval abundance by locality.

Locality		Stations occupied	Stations with larvae	Samples with larvae	Total caught	$\bar{X}$ nos./ stn.	$\bar{X}$ nos./ 1000m^3
Queen Charlotte Sound	(N)	5	3	7	10	2.0	4.7
	(D)[a]	2	1	1	1	0.5	1.2
Quatsino Sound	(N)	6	5	8	90	14.5	29.8
	(D)	5	3	5	7	1.4	2.7
Kyuquot Sound		5	3	4	125	25.0	43.3
Nootka Sound	(N)	8[b]	8	15	276	34.5	72.0
	(D)	5	0	0	0	0	0
Clayoquot Sound		6	6	10	55	9.1	18.0
North Barkley Sound		7	6	11	108	15.4	38.6
South Barkley Sound		10[c]	6	12	42	4.2	6.4
Total	(N)	47	36	67	706		
	(D)	12	4	6	8		

[a]Not a replicate day-night tow.

[b]Station 29 was a replicate night tow.

[c]Station 2 was a replicate night tow.

Table 6. Size composition of sablefish larvae by station and by locality. R/V G.B. REED, April 16-May 10, 1984.

Fork length (mm)	South Barkley Sound Station no.							North Barkley Sound Station no.						
	3	5	6	7	9	53	T	10	12	14	16	17	52	T
8														
9														
10	2						2		1					1
11	3						3		1		3			4
12	0				1		1		1		3			4
13	0	1			0	1	2		4		5	1		10
14	0	0			0	2	2		2		4	0		6
15	2	0	2	2	3	2	11		7		8	0		15
16	0	0	0	0	1	1	2		3		7	1		11
17	2	0	1	1	1	1	6		4		11	1	1	17
18		0	0	2	0		2	1	2	1	4	0	1	9
19		0	1		0		1	2	2		7	0	0	11
20		1	2		1		4	0	1		3	1	0	5
21		0			1		1	1			1	0	1	3
22		1			0		1	0			1	0	1	2
23		0			0		0	0			0	0	0	0
24		0			1		1	0			0	0	0	0
25		0			0		0	0			0	0	0	0
26		1			0		1	3			1	0	0	4
27					0		0	0			0	0	0	0
28					1		1	0			0	0	0	0
29					1		1	0			0	0	0	0
30								1			0	0	0	1
31								0			0	0	1	1
32								1			1	0		2
33								0				0		0
34								0				0		0
35								0				0		0
36								1				1		2
37														
38														
Total	9	4	6	5	11	7	42	10	28	1	59	5	5	108
$\bar{FL}$ (mm)							16.7							17.4

Table 6 (cont'd)

Fork length (mm)	Clayoquot Sound Station no.							Nootka Sound Station no.							
	18	20	21	22	23	51	T	25	26	27	28	29	49	50	T
8		1					1								
9		0					0						1		1
10		1					1						0		0
11		2		1			3			2		1	5		8
12		1		0			1	1		6		1	13		21
13		2	2	0			4	1	1	12		0	14	1	29
14		1	3	2	1		7	1	1	8		3	36	1	50
15	1	0	1	0	1		3	1	1	5		2	47	0	56
16	0	2	0	0	1	1	4	0	1	2	1	3	23	1	31
17	0	1	0	0	0	1	2	0	1	3	1	6	15	9	35
18	1	0	1	0	1	0	3	0	2	1	0	1	2	5	11
19		0	0	1	1	1	3	0	0		1	3	5	3	12
20		0	0	1	2	0	3	1	1		0	0	2	1	5
21		0	0	3	0	1	4	0	1		0	0	1	1	3
22		0	0	0	0		0	0	1		0	1		0	2
23		0	0	0	0		0	0	2		0	1		0	3
24		0	0	0	1		1	0	0		0	0		0	0
25		0	0	1	0		1	0	0		0	1		0	1
26		0	0	2	0		2	0	1		0	1		1	3
27		0	0	0	0		0	1	1		0	1			3
28		0	0	1	0		1	0			0				0
29		0	0	0	1		1	0			0				0
30		1	0	1	1		3	0			0				0
31			0	0	0		0	1			0				1
32			0	0	0		0				0				0
33			0	2	0		2				0				0
34			0	1	0		1				0				0
35			1	1	0		2				0				0
36			0		0		0				1				1
37			1		0		1								
38					1		1								
Total	2	12	9	17	11	4	55	7	14	39	4	25	164	23	276
$\bar{FL}$ (mm)							20.1								15.6

Table 6 (cont'd)

Fork length (mm)	Kyuquot Sound Station no.				Quatsino Sound Station no.								
					Night tows					Day tows			
	33	34	48	T	36	37	38	39	40	36	38	39	T
8									4				4
9									2				2
10		1		1					0				0
11		0		0		1			1				2
12	1	11		12		0			2				2
13		24		24		1		2	1				4
14		21		21		0		4	2				6
15		17		17		0	1	7	0				8
16		17		17		2		5	0				7
17		8		8		1		6	0				7
18		4	1	5				12	0				12
19		1	0	1				4	1	1	1		7
20		1	0	1	1			12	0	0	0		13
21		4	0	4	0			1	0	0	0	1	2
22		3	0	3	0			3	0	1	1	0	5
23		2	0	2	1			6	0		0	0	7
24		3	0	3				4	1		0	1	6
25		2	0	2				2			0		2
26		0	1	1							0		0
27		1	1	2							0		0
28		0		0							0		0
29		1		1							1		1
30													
31													
32													
33													
34													
35													
36													
37													
38													
Total	1	121	3	125	2	5	1	68	14	2	3	2	97
$\bar{FL}$ (mm)				15.7									17.8

Table 6 (cont'd)

Fork length (mm)	Queen Charlotte Sound Station no. Night tows 43	44	45	Day tow 46	T	Survey area total
8			2		2	7
9			2		2	5
10			1		1	6
11					0	20
12					0	41
13					0	73
14		1			1	93
15		0			0	110
16		0			0	72
17	1	0			1	76
18	0	0			0	42
19	1	0			1	36
20	0	1			1	32
21	0				0	17
22	0				0	13
23	1				1	13
24					0	10
25					0	6
26				1	1	14
27						5
28						2
29						4
30						4
31						1
32						2
33						2
34						1
35						2
36						3
37						1
38						1
Total	3	2	5	1	11	714
$\bar{FL}$ (mm)					14.8	16.6

Appendix table 1. Set locations of the neuston plankton tows. R/V G.B. REED, April 16-May 10, 1984. All tows were 15 minutes duration.

Locality	Stn. no.	Date	Time	Latitude	Longitude	Bottom depth (m/fath)	Flow meter total
South Barkley Sound	3	Apr. 17	2104	48°32.2	125°15.5	113/62	20145
			2130				18557
	5		2310	48°25.5	125°28.3	132/72	30250
			2338				17111
	7	Apr. 19	2018	48°18.6	125°41.2	154/84	-
			2046				18625
	9		2225	48°10.6	125°56.2	914/504	15541
			2250				28792
North Barkley Sound	10	Apr. 19	2400	48°19.0	126°06.3	750/410	-
			0030				-
	12	Apr. 20	1952	48°49.2	125°42.0	54/31	19263
			2011				17446
	14		2230	48°41.2	125°53.0	73/40	15363
Clayoquot Sound	20	Apr. 21	2015	49°05.0	126°19.0	95/52	21031
			2042				22112
	21		2155	49°00.0	126°25.0	148/81	28997
			2206				21339
	22	Apr. 21	2341	48°55.0	126°31.6	201/110	27724
			2400				25360
	23	Apr. 22	0116	48°51.0	126°38.0	567/310	24771
			0137				22423
Nootka Sound	25	Apr. 23	1931	49°25.5	126°49.0	93/51	20035
			1955				19789
	26		2100	49°21.0	126°55.0	148/81	15950
			2122				19687
	27		2238	49°16.0	127°01.5	172/94	24926
			2258				26343
	28	Apr. 24	0042	49°13.5	127°05.0	433/237	27520
			0102				18009
	29		0216	49°07.0	127°13.8	1592/876	23547
			0235				20538
Kyuquot Sound	34	Apr. 24	2032	49°30.5	127°51.0	2012/1094	25740
			2055				28928
	33		2315	49°40.1	127°40.3	585/321	20202
			2338				22542
	32	Apr. 25	0125	49°47.2	127°29.0	90/49	28988
			0149				25640
	30		0304	49°55.0	127°21.0	59/32	36505
			0325				20643

Appendix table 1 (cont'd)

Locality	Stn. no.	Date	Time	Latitude	Longitude	Bottom depth (m/fath)	Flow meter total
Quatsino Sound	39	Apr. 25	0902	50°07.5	128°35.0	1810/990	27726
			0924				26769
	38		1115	50°13.1	128°22.7	1061/580	25922
(Day tow)			1134				24694
	37		1305	50°17.9	128°12.9	194/106	27862
			1324				22508
	36		1434	50°21.5	128°06.7	95/52	28350
			1453				25602
	35		1551	50°24.0	128°02.0	104/57	21632
			1613				23885
(Night tow)	35	Apr. 25	1947	50°24.0	128°02.0	119/65	19038
			2010		128°03.0		18475
	36		2053	50°21.5	128°06.5	97/53	19769
			2112		128°07.4		19998
	37		2210	50°18.0	128°12.5	179/98	27059
			2228				26324
	38		2335	50°13.0	128°22.0	1097/600	21070
			2400				25744
	39	Apr. 26	0110	50°07.5	128°34.5	1719/940	27236
			0130				21817
	40		0421	50°26.5	128°39.0	1152/630	17801
			0440				17416
Queen Charlotte Sd. (Night tow)	41	Apr. 26	1933	51°18.9	128°55.0	234/128	21087
			1951	51°19.2	128°56.1	232/127	16931
	42		2131	51°15.0	129°15.0	282/154	17385
			2151	51°15.1	129°16.0		18556
	43		2320	51°13.5	129°31.5	293/160	23129
			2338	51°14.1	129°33.5		18125
	44	Apr. 27	0157	51°07.5	130°02.5	1463/800	-
			0225				29527
	45		0426	50°59.5	129°43.5	1170/641	19417
			0447	51°00.4	129°42.8		18972
(Day tow)	46	Apr. 27	0633	50°52.5	129°26.5	185/101	19738
			0655	50°53.1	129°27.7		19070
	47		0832	50°40.0	129°25.5	1920/1056	25441
			0855				23803
Kyuquot Sound	48	Apr. 27	1939	49°21.0	127°36.0	1390/760	-
			1959		127°38.9		-

Appendix table 1 (cont'd)

Locality	Stn. no.	Date	Time	Latitude	Longitude	Bottom depth (m/fath)	Flow meter total
Nootka Sound (Night tow)	49	Apr. 27	2155	49°11.0	127°21.5	1481/810	-
			2217		127°23.1		-
	29		2245	49°07.0	127°13.8	1607/880	23003
		Apr. 28	0007		127°14.7		21251
	50		0148	49°00.5	127°01.5	1207/660	24704
			0204				20593
(Day tow)	25	Apr. 28	0614	49°25.5	126°49.0	91/50	18207
			0634				20215
	26		0740	49°21.0	126°55.0	146/80	23503
			0803				20878
	27		0859	49°16.0	127°01.5	174/95	22733
			0918				25537
	28		1002	49°13.5	127°05.0	435/238	23080
			1020				22983
	29		1218	49°07.6	127°13.7	1536/840	26835
			1237		127°15.1		23541
Clayoquot Sound	18	Apr. 28	1930	48°38.8	126°25.3	914/500	24930
			1950	48°37.9	126°24.2		21841
North Barkley Sound	17	Apr. 28	2120	48°38.8	126°25.3	610/332	27713
			2140	48°26.1	126°12.2		28844
	16		2303	48°30.6	126°07.1	519/62	18043
			2322	48°29.7	126°06.2		24537
	15	Apr. 29	0045	48°35.2	126°01.4	113/62	21863
			0105				20873
Clayoquot Sound	51	Apr. 29	2040	48°44.2	126°19.2	518/283	-
			2103	48°44.1	126°18.5		-
	52		2247	48°34.5	126°12.9	624/341	22848
			2308	48°34.1	126°13.0		-
South Barkley Sound	53	Apr. 30	0227	48°24.5	125°57.1	338/185	26451
			0247	48°23.8	125°56.3		-
			0307	48°23.1	125°55.3		-
	8	May 4	2030	48°15.2	125°47.6	209/114	29872
			2050	48°15.6	125°46.6	198/108	27614
			2150	48°15.2	125°47.6	209/114	21212
			2210	48°15.5	125°46.7	201/110	21570
	6		2338	48°21.7	125°34.9	168/82	30156
			2400	48°22.0	125°33.7	150/80	21971
	2	May 5	1705	48°35.6	125°09.0	112/61	27456
			1728	48°35.1	125°10.1	110/60	25593
	1		1818	48°39.0	125°02.5	53/29	22359
			1840	48°38.8	125°00.0	48/26	24739
			2123	48°38.7	125°02.5	48/26	30601
			2141	48°38.5	125°03.7	68/37	18059
	2		2244	48°35.6	125°09.0	113/62	18199
			2303	48°35.2	125°09.0	112/61	19077

Appendix table 2. Number of sablefish larvae identified per station, and mean numbers/1000 m^3. R/V G.B. REED, April 16-May 10, 1984.

Locality	Stn. no.	Date	Time	m^3/tow	Sablefish larvae		
					Total nos.	nos./1000 m^3	$\bar{x}$ nos./ 1000 m^3/stn.
South Barkley Sound	3	Apr. 17	2104	214.8	7	32.6	21.4
			2130	197.9	2	10.1	
	5		2310	322.6	3	9.3	7.4
			2338	182.5	1	5.5	
	7	Apr. 19	2018	227.0[a]	5	11.0	11.0
			2046	198.6	0	-	
	9		2225	165.7	6	36.2	26.3
			2250	307.0	5	16.3	
	10	Apr. 19	2400	227.0[a]	6	26.4	22.0
			0030	227.0[a]	4	17.6	
North Barkley Sound	12	Apr. 20	1952	205.4	14	68.1	73.7
			2011	186.0	14	79.3	
	14		2230	163.8	1	6.1	6.1
Clayoquot Sound	20	Apr. 21	2015	224.3	0	-	25.5
			2042	235.8	12	50.9	
	21		2155	309.2	1	3.2	19.2
			2206	227.5	8	35.1	
	22		2341	295.6	8	27.1	30.2
			2400	270.4	9	33.3	
	23	Apr. 22	0116	264.1	5	18.9	22.0
			0137	239.1	6	25.1	
Nootka Sound	25	Apr. 23	1931	213.6	1	4.7	16.6
			1955	211.0	6	28.4	
	26		2100	170.1	10	58.8	40.0
			2122	209.9	4	19.1	
	27		2238	265.8	15	56.4	70.9
			2258	280.9	24	85.4	
	28	Apr. 24	0042	293.5	4	13.6	6.8
			0102	192.0	0	-	
	29		0216	251.1	4	15.9	21.7
			0235	219.0	6	27.4	
Kyuquot Sound	34	Apr. 24	2032	274.5	58	211.3	207.8
			2055	308.5	63	204.2	
	33		2315	215.4	1	4.6	2.3
			2338	240.4	0	-	
	32	Apr. 25	0125	309.1	0	-	
			0149	273.4	0	-	
	30		0304	389.3	0	-	
			0325	220.1	0	-	

Appendix table 2 (cont'd)

Locality	Stn. no.	Date	Time	m^3/tow	Sablefish larvae		
					Total nos.	nos./1000 m^3	$\bar{x}$ nos./ 1000 m^3/stn.
Quatsino Sound (Day tow)	39	Apr. 25	0902	295.6	1	3.4	3.4
			0924	285.4	1	3.5	
	38		1115	276.4	1	3.5	5.6
			1134	263.3	2	7.6	
	37		1305	240.0	0	-	
			1324	302.3	0	-	
	36		1434	273.0	0	-	4.4
			1453	230.7	2	8.7	
	35		1551	230.7	0	-	
			1613	254.7	0	-	
(Night tow)	35	Apr. 25	1947	203.0	0	-	
			2010	197.0	0	-	
	36		2053	210.8	0	-	4.7
			2112	213.2	2	9.4	
	37		2210	288.5	3	10.4	9.9
			2228	280.7	2	7.1	
	38		2335	224.7	1	4.5	2.3
			2400	274.5	0	-	
	39	Apr. 26	0110	290.4	48	165.3	125.7
			0130	232.6	20	86.0	
	40		0421	189.8	2	10.5	37.6
			0440	185.7	12	64.6	
Queen Charlotte Sound (Night tow)	41	Apr. 26	1933	224.8	0	-	
			1951	180.5	0	-	
	42		2131	185.4	0	-	
			2150	197.9	0	-	
	43		2320	246.6	1	4.1	7.2
			2338	193.3	2	10.3	
	44	Apr. 27	0157	222.4[a]	1	4.5	3.9
			0225	314.9	1	3.2	
	45		0426	207.0	1	4.8	12.3
			0447	202.3	4	19.8	
(Day tow)	46	Apr. 27	0633	210.5	1	4.8	2.4
			0655	203.3	0	-	
	47		0832	271.3	0	-	
			0855	253.8	0	-	
Kyuquot Sound	48	Apr. 27	1939	238.8[a]	0	-	6.3
			1959	238.8[a]	3	12.6	
Nootka Sound (Night tow)	49	Apr. 27	2155	238.8[a]	24	100.5	343.4
			2217	238.8[a]	140	586.3	
	29		2245	245.6	1	4.1	33.0

Appendix table 2 (cont'd)

Locality	Stn. no.	Date	Time	m^3/tow	Sablefish larvae		
					Total nos.	nos./1000 m^3	$\bar{x}$ nos./ 1000 m/stn.
Nootka		Apr. 28	0007	226.6	14	61.8	
Sound	50		0148	263.4	20	75.9	44.8
			0204	219.6	3	13.7	
(Day tow)	25	Apr. 28	0614	194.1	0	-	
			0634	215.6	0	-	
	26		0740	250.6	0	-	
			0803	222.6	0	-	
	27		0859	242.4	0	-	
			0918	272.3	0	-	
	28		1002	246.1	0	-	
			1020	245.1	0	-	
	29		1218	286.1	0	-	
			1237	251.0	0	-	
Clayoquot	18	Apr. 28	1930	265.8	2	7.5	3.8
			1950	232.0	0	-	
North	17	Apr. 28	2120	295.5	3	10.2	8.4
Barkley			2140	307.6	2	6.5	
Sound	16		2303	192.4	31	161.1	134.1
			2322	261.6	28	107.0	
	15	Apr. 29	0045	233.1	0	-	
			0105[a]	222.6	0	-	
Clayoquot	51	Apr. 29	2040	262.9[a]	1	3.8	7.6
Sound			2103	262.9[a]	3	11.4	
North	52	Apr. 29	2247	243.6	2	8.2	9.8
Barkley Sound			2308	262.9[a]	3	11.4	
South	53	Apr. 30	0227	282.1	3	10.6	8.6
Barkley			0247	262.9[a]	2	7.6	
Sound			0307	262.9[a]	2	7.6	
	8	May 4	2030	318.5	0	-	
			2050	294.5	0	-	
			2150	226.2	0	-	
			2210	230.0	0	-	
	6		2338	321.0	3	9.3	3.7
			2400	234.3	3	12.8	
	2	May 5	1705	292.8	0	-	
			1728	272.9	0	-	
	1		1818	238.4	0	-	
			1840	263.8	0	-	
			2123	326.3	0	-	
			2141	192.6	0	-	
	2		2244	194.1	0	-	
			2303	203.4	0	-	

[a]Mean of flow volume for specific transects.

Appendix table 3. Numbers of Pacific herring and lingcod caught per station and mean numbers/1000 m^3. R/V G.B. REED, April 16-May 10, 1984.

Locality	Stn. no.	Date	Time	Pacific herring			Lingcod		
				Total	nos./1000 m^3	$\bar{x}$ nos./ 1000 m^3/stn.	Total	nos./1000 m^3	$\bar{x}$ nos./ 1000 m^3/stn.
South Barkley Sound	3	Apr. 17	2104						
			2130						
	5		2310						
			2338						
	7	Apr. 19	2018						
			2046						
	9		2225						
			2250						
North Barkley Sound	10	Apr 19	2400						
		Apr 20	0030						
	12		1952						
			2011						
	14		2230						
Clayoquot Sound	20	Apr. 21	2015						
			2042						
	21		2155						
			2206						
	22		2341						
			2400						
	23	Apr. 22	0116						
			0137						
Nootka Sound	25	Apr. 23	1931	114	533.7	646.0	7	32.8	75.7
			1955	160	758.3		25	118.5	
	26		2100						
			2122						
	27		2238						
			2258						
	28	Apr. 24	0042						
			0102						
	29		0216						
			0235						
Kyuquot Sound	34	Apr. 24	2032						
			2055						
	33		2315						
			2338						
	32	Apr. 25	0125	-	-	3.7			
			0149	2	7.3				
	30		0304	4	10.3	17.5			
			0325	5	24.7				

Apendix table 3 (cont'd)

Locality	Stn. no.	Date	Time	Pacific herring Total	Pacific herring nos./1000 m^3	Pacific herring $\bar{x}$ nos./ 1000 m^3/stn.	Lingcod Total	Lingcod nos./1000 m^3	Lingcod $\bar{x}$ nos./ 1000 m^3/stn.
Quatsino Sound	39	Apr. 25	0902						
			0924						
	38		1115						
			1134						
(Day tow)	37		1305						
			1324						
	36		1434						
			1453						
	35		1551						
			1631						
(Night tow)	35	Apr. 25	1947	28	137.9	155.3			
			2010	34	172.6				
	36		2053	3	14.2	7.1	4	19.0	9.5
			2112	-	-		-	-	
	37		2210						
			2228						
	38		2335						
			2400						
	39	Apr. 26	0110						
			0130						
	40		0421	-	-	8.1	3	15.8	10.6
			0440	3	16.2		1	5.4	
Queen Charlotte Sound (Night tow)	41	Apr. 26	1933	2	8.9	76.5			
			1951	26	144.0				
	42		2131	1	2.7	2.7	-	-	5.1
			2150	-	-		2	10.1	
	43		2320						
			2338						
	44	Apr. 27	0157						
			0225						
	45		0426				1	4.8	2.4
			0447				-	-	
(Day tow)	46	Apr. 27	0633						
			0655						
	47		0832						
			0855						
Kyuquot Sound	48	Apr. 27	1939	3	12.6	37.7			
			1959	15	62.8				

Appendix table 3 (cont'd)

Locality	Stn. no.	Date	Time	Pacific herring Total	nos./1000 m^3	$\bar{x}$ nos./ 1000 m^3/stn.	Lingcod Total	nos./1000 m^3	$\bar{x}$ nos./ 1000 m^3/stn.
Nootka Sound (Night tow)	49	Apr. 27	2155						
			2217						
	29		2245						
		Apr. 28	0007						
	50		0148						
			0204						
(Day tow)	25	Apr. 28	0614				3	15.5	14.7
			0634				3	13.9	
	26		0740						
			0803						
	27		0859						
			0918						
	28		1002						
			1020						
	29		1218						
			1237						
Clayoquot Sound	18	Apr. 28	1930						
			1950						
North Barkley Sound	17	Apr. 28	2120				1	3.4	11.5
			2140				6	19.5	
	16		2303						
			2322						
	15	Apr. 29	0045	-	-	4.5			
			0105	2	9.0				
	51		2040	-	-	1.9	3	11.4	11.4
			2103	1	3.8		3	11.4	
	52		2247						
			2308						
South Barkley Sound	53	Apr. 30	0227				1	10.6	3.5
			0247				-	-	
			0307				-	-	
	8	May 4	2030	-	-	10.2	-	-	3.0
			2050	12	40.7		1	3.4	
			2150	-	-		-	-	
			2210	-	-		2	8.7	
	6		2338	-	-	2.1	16	49.8	52.7
			2400	1	4.2		13	55.5	
	2	May 5	1705				1	3.4	3.5
			1728				1	3.7	
	1		1818				-	-	5.3
			1840				1	3.8	
			2123	24	73.6	47.2	4	12.3	
			2141	4	20.8		1	5.2	
	2		2244	7	36.1	18.1	-	-	2.5
			2303	-	-		1	4.9	

Appendix table 4. Numbers of lemon sole and rockfish (sp.) caught per station and mean numbers/1000 m^3. R/V G.B. REED, April 16-May 10, 1984.

Locality	Stn. no.	Date	Time	Lemon sole			Rockfish (sp.)		
				Total	nos./1000 m^3	$\bar{x}$ nos./ 1000 m^3/stn.	Total	nos./1000 m^3	$\bar{x}$ nos./ 1000 m^3/stn.
South Barkley Sound	3	Apr. 17	2104	2	9.3	9.7			
			2130	2	10.1				
	5		2310						
			2338						
	7	Apr. 19	2018						
			2046						
	9		2225						
			2250						
North Barkley Sound	10	Apr. 19	2400				-	-	2.2
		Apr. 20	0030				1	4.4	
	12		1952						
			2011						
			2230						
Clayoquot Sound	20	Apr. 21	2015						
			2042						
	21		2155						
			2206						
	22		2341						
			2400						
	23	Apr. 22	0116						
			0137						
Nootka Sound	25	Apr. 23	1931	4	18.7	21.2			
			1955	5	23.7				
	26		2100	1	5.9	2.3			
			2122	-	-				
	27		2238						
			2258						
	28	Apr. 24	0042						
			0102						
	29		0216	1	4.0	2.2			
			0235	1	4.6				
Kyuquot Sound	34	Apr. 24	2032				5	18.2	9.1
			2055				-	-	
	33		2315						
			2338						
	32	Apr. 25	0125	3	9.7	4.8			
			0149	-	-				
	30		0304	11	28.3	16.4			
			0325	1	4.5				

Appendix table 4 (cont'd)

Locality	Stn. no.	Date	Time	Lemon sole Total	Lemon sole nos./1000 m^3	Lemon sole $\bar{x}$ nos./1000 m^3/stn.	Rockfish (sp.) Total	Rockfish (sp.) nos./1000 m^3	Rockfish (sp.) $\bar{x}$ nos./1000 m^3/stn.
Quatsino Sound	39	Apr. 25	0902						
			0924						
	38		1115						
			1134						
(Day tow)	32		1305						
			1324						
	36		1434						
			1453						
	35		1551						
			1631						
(Night tow)	35	Apr. 25	1947						
			2010						
	36		2053						
			2112						
	37		2210						
			2228						
	38		2335						
			2400						
	39	Apr. 26	0110						
			0130						
	40		0421						
			0440						
Queen Charlotte Sound (Night tow)	41	Apr. 26	1933						
			1951						
	42		2131						
			2150						
	43		2320						
			2338						
	44	Apr. 27	0157				-	-	1.6
			0225				1	3.2	
	45		0426						
			0447						
(Day tow)	46	Apr. 27	0633						
			0655						
	47		0832						
			0855						
Kyuquot Sound	48	Apr. 27	1939	-	-	12.6			
			1959	6	25.1				

Appendix table 4 (cont'd)

Locality	Stn. no.	Date	Time	Lemon sole			Rockfish (sp.)		
				Total	nos./1000 m^3	$\bar{x}$ nos./ 1000 m^3/stn.	Total	nos./1000 m^3	$\bar{x}$ nos./ 1000 m^3/stn.
Nootka Sound (Night tow)	49	Apr. 27	2155						
	29		2217						
			2245						
		Apr. 28	0007						
	50		0148	-	-	2.3			
			0204	1	4.6				
(Day tow)	25	Apr. 28	0614						
			0534						
	26		0740	1	4.0	2.0			
			0803	-	-				
	27		0859						
			0918						
	28		1002						
			0120						
	29		1218						
			1237						
Clayoquot Sound	18	Apr. 28	1930				1	1.9	1.9
			1950				-		
North Barkley Sound	17	Apr. 28	2150	-	-	1.7			
			2140	1	3.3				
	16		2303						
			2322						
	15	Apr. 29	0045						
			0105						
	51		2040	8	30.4	19.0			
			2103	2	7.6				
	52		2247				1	4.1	2.1
			2308				-	-	
South Barkley Sound	53	Apr. 30	0227						
			0247						
			0307						
	8	May 4	2030	1	3.1	1.6			
			2050	1	3.4				
			2150	-	-				
			2210	-	-				
	6		2330	1	3.1	1.6			
			2400	-	-				
	2	May 5	1705						
			1728						
	1		1818						
			2123	1	5.2	1.7			
			2141	-	-				
	2		2244	2	4.9	2.5			
			2303	-	-				

Appendix table 5. Numbers of other larval fish caught in the neuston tows by station for each of the areas surveyed. R/V G.B. REED, April 16-May 10, 1984.

	South Barkley Sound									North Barkley Sound						
Station no.	1	2	3	5	6	7	8	9	53	10	12	14	15	16	17	52
Irish Lord (sp.)				1		2		18						1	3	
Pacific sandlance	65	10			115		6		3		3		3		331	
Sculpin (sp.)	20	20	7	3	22	1	15		1	17	24		9	3	21	3
Prickleback (sp.)	50	1			18		70		6		6		1		22	
Lanternfish (sp.)				1				16		15					4	
Greenling (sp.)	18	6		5	3	4	1	6	1	1				16	1	1
Smelt (sp.)	39						3				7					
Snailfish (sp.)	1	2	2			1	1				1	1			1	
Dwarf wrymouth			2				1								11	1
Cabezon			2	1	1	2			1				1			
Poacher (sp.)	1				2		3								1	
Gunnel (sp.)		1														
Sand sole					1		1								1	
Unidentified larvae	3	1			1	1	2				23			1	2	
Unidentified eggs		1	3	3	17	1	1	6	10		46	28	3	32	101	14

Appendix table 5 (cont'd)

	Clayoquot Sound					
Station no.	18	20	21	22	23	51
Irish Lord (sp.)						
Pacific sandlance						10
Sculpin (sp.)	5	18		5	2	2
Prickleback (sp.)	25					1
Lanternfish (sp.)					4	
Greenling (sp.)		2	1	2	1	
Smelt (sp.)						
Snailfish (sp.)				1		1
Dwarf wrymouth						
Cabezon	1					
Poacher (sp.)						1
Gunnel (sp.)						1
Sand sole						
Unidentified larvae	1					1
Unidentified eggs	12	57	108	46	32	

Appendix table 5 (cont'd)

	Nootka Sound											
	Night tows							Day tows				
Station no.	25	26	27	28	29	49	50	25	26	27	28	29
Irish Lord (sp.)	4		3				1					
Pacific sandlance	64							75				
Sculpin (sp.)	31	11	13	5	7			152				
Prickleback (sp.)	139											
Lanternfish (sp.)				6	28	9	18					
Greenling (sp.)	2	4		1	1	1						
Smelt (sp.)												
Snailfish (sp.)	3	1	14			1						
Dwarf wrymouth	7	2	3				2					
Cabezon		1		1	1		2					
Poacher (sp.)	1					1						
Gunnel (sp.)	2						1					
Sand sole												
Unidentified larvae	10			2			1					
Unidentified eggs	49	135	110	69	111	44	15	5	16	18	33	64

Appendix table 5 (cont'd)

	Kyuquot Sound					Quatsino Sound										
						Night tows						Day tows				
Station no.	34	30	32	33	48	39	35	36	37	38	40	39	35	36	37	38
Irish Lord (sp.)	360			2	300	76	1		7	5	7					
Pacific sandlance		7	1	2	81		24	2	1	2	47					
Sculpin (sp.)	3	2	2	15	9	13			44	7	3		1			
Prickleback (sp.)		8			60	1	3				31					
Lanternfish (sp.)	33			4		1										
Greenling (sp.)	2					6				1		3				
Smelt (sp.)		1					2									
Snailfish (sp.)	6										1					
Dwarf wrymouth					5											
Cabezon	2			1	2			1								
Poacher (sp.)		1	1													
Gunnel (sp.)							1			1	1					
Sand sole				1	3		2									
Unidentified larvae		1					1	1								
Unidentified eggs	21	1	34	43	8	22	1	6		64	4	69	7	31	15	17

Appendix table 5 (cont'd)

	Queen Charlotte Sound						
	Night tows					Day tows	
Station no.	41	42	43	44	45	46	47
Irish Lord (sp.)	3	1	7	313	25		
Pacific sandlance	152	5	6	3	8		
Sculpin (sp.)	1	4			41	3	
Prickleback (sp.)	2	1				1	
Lanternfish (sp.)				17			
Greenling (sp.)		1	1	12			1
Smelt (sp.)							
Snailfish (sp.)							
Dwarf wrymouth		1					
Cabezon	1						
Poacher (sp.)							
Gunnel (sp.)							
Sand sole							
Unidentified larva	23	1					
Unidentified eggs	7	23	80	145	48	7	10

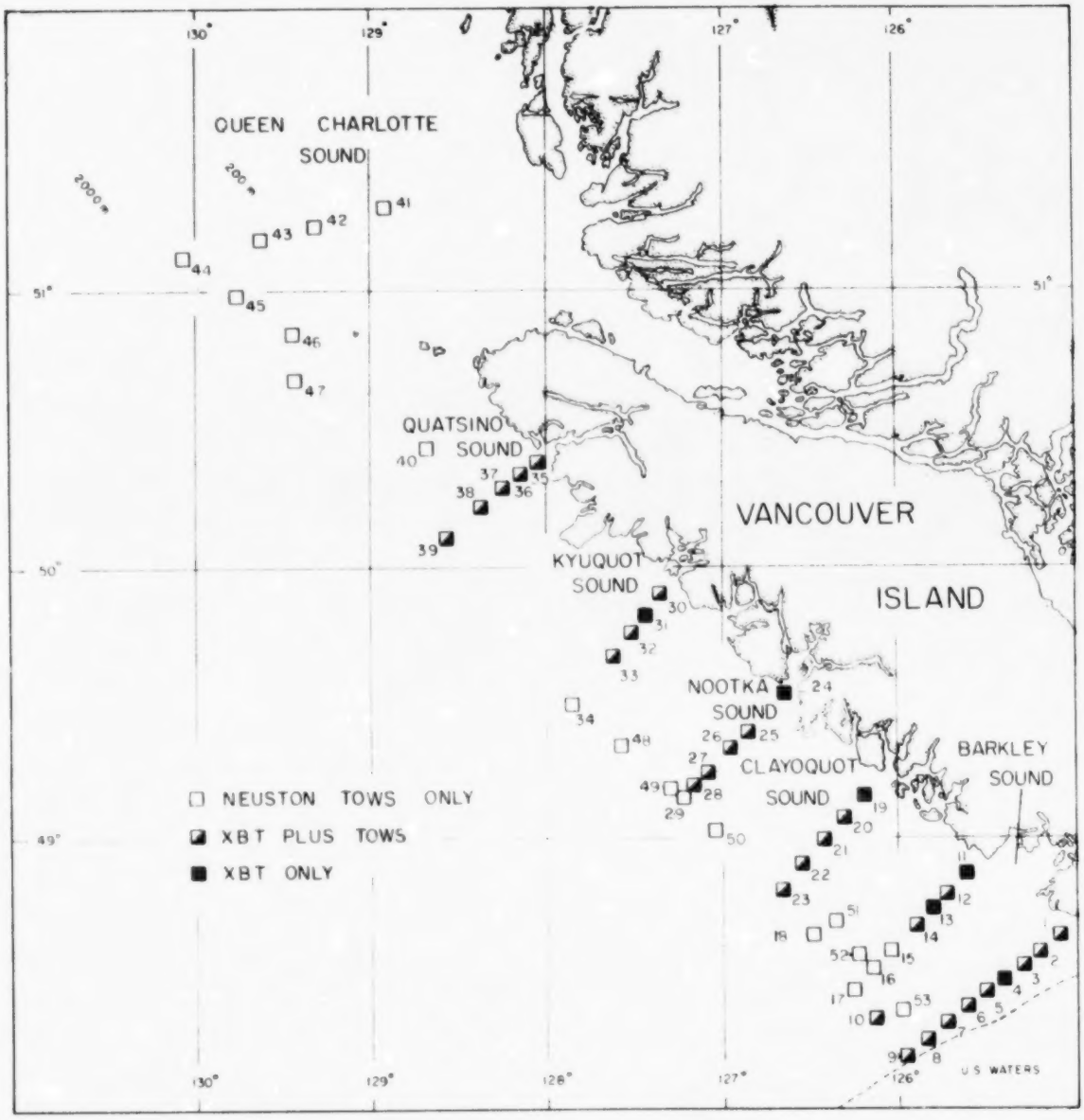

Fig. 1. Station locations for the R/V G.B. REED, April 16 to May 10, 1984.

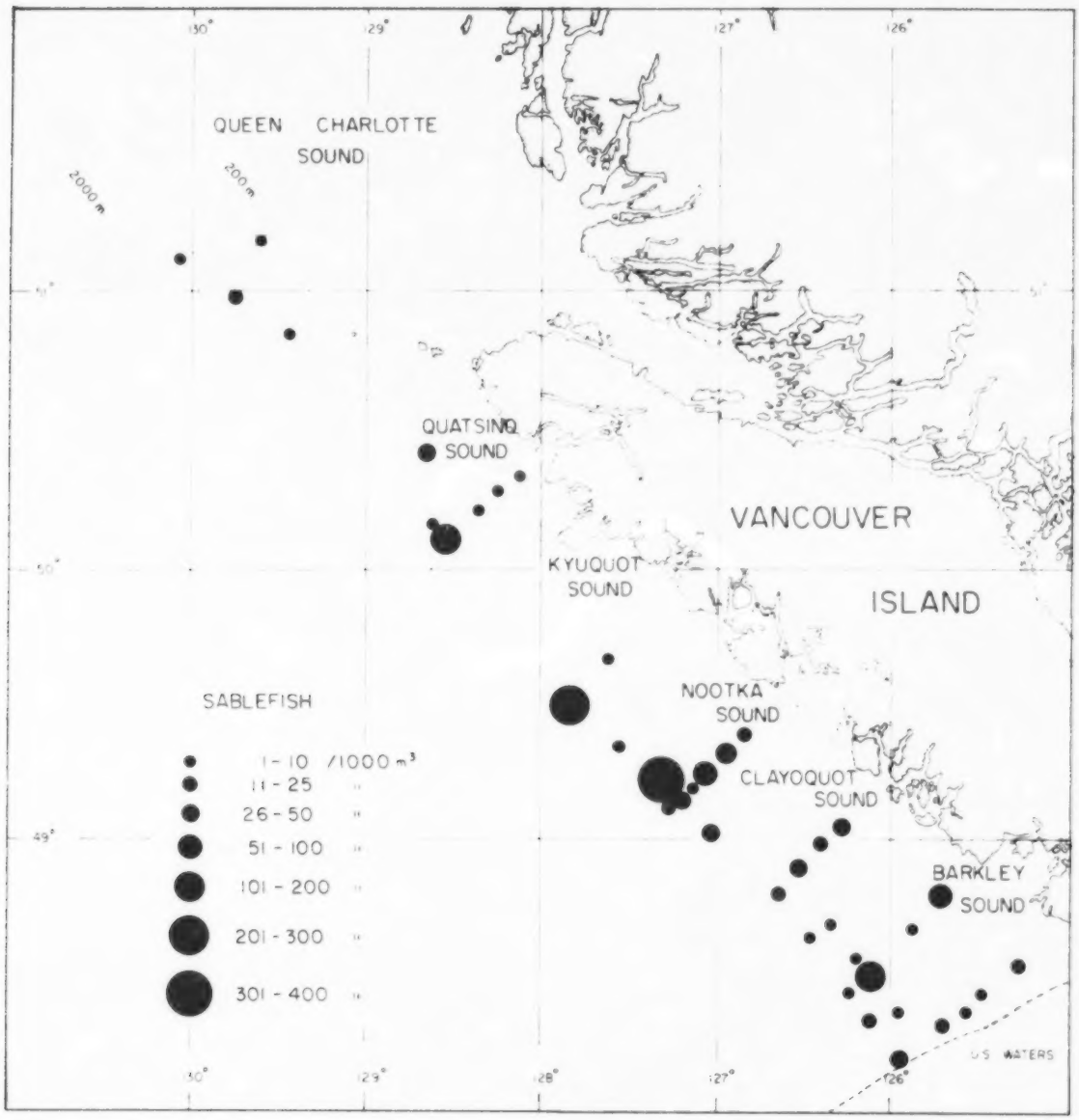

Fig. 2. Distribution of sablefish larvae from neuston tows. R/V G.B. REED, April 16 to May 10, 1984. Abundance expressed as numbers per 1000 m^3.

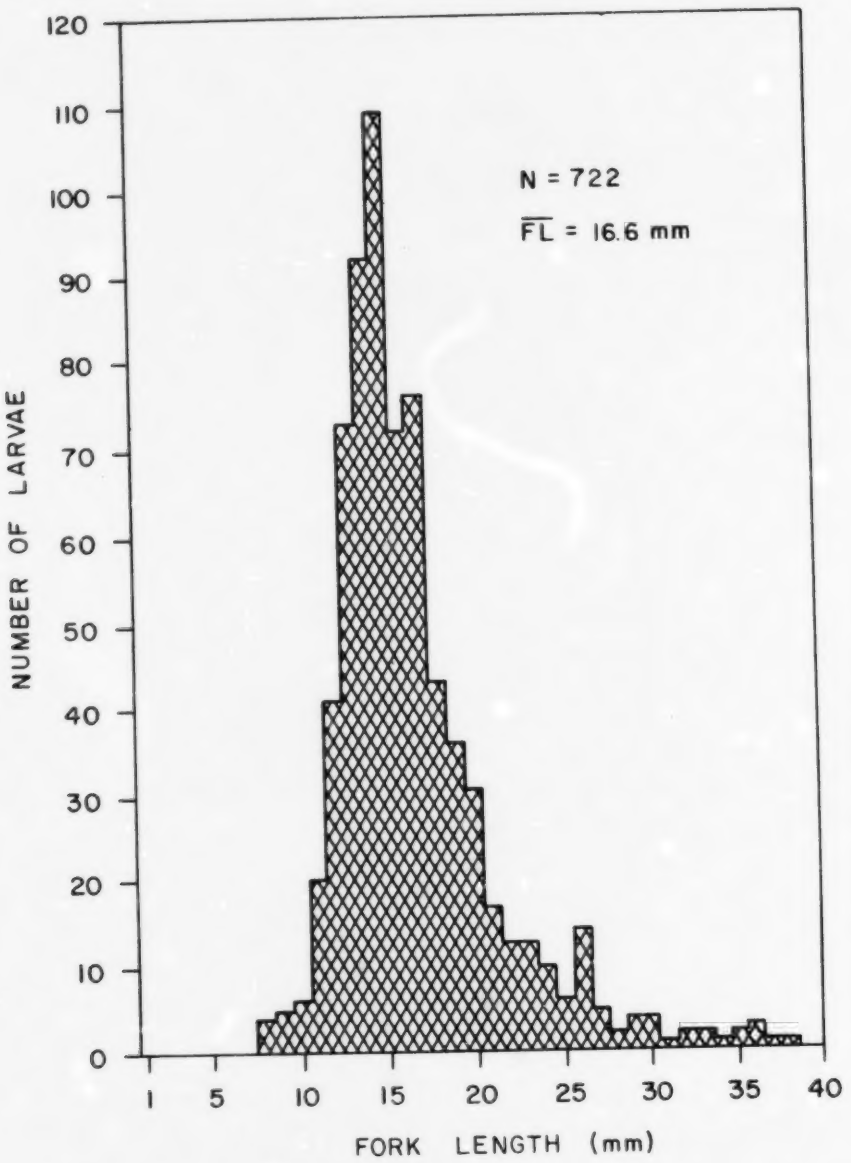

Fig. 3. Size composition of sablefish larvae from neuston tows. R/V G.B. REED, April 16 to May 10, 1984.

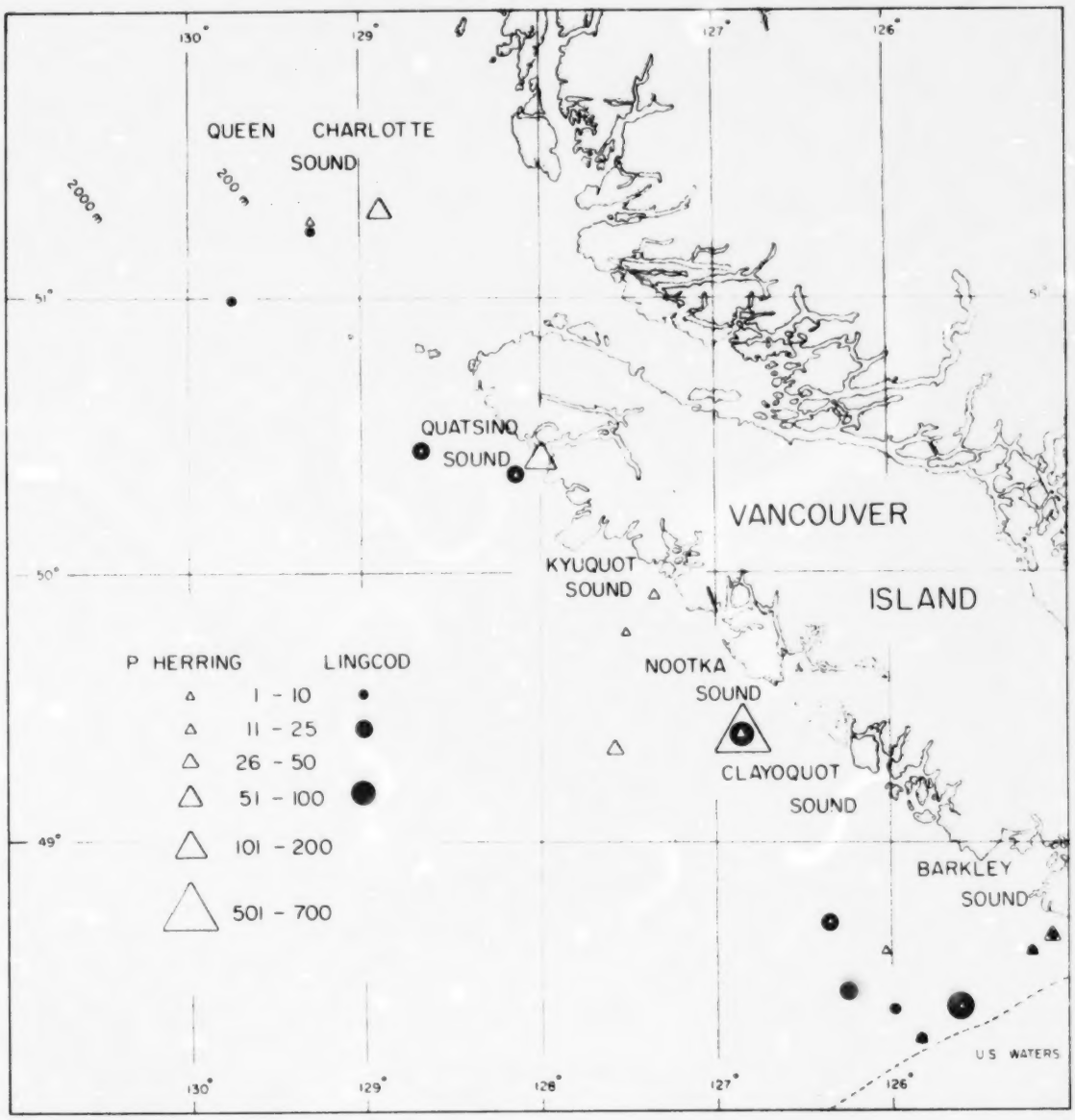

Fig. 4. Distribution of Pacific herring and lingcod larvae from neuston tows. R/V G.B. REED, April 16 to May 10, 1984. Abundance expressed as numbers per 1000 m^3.

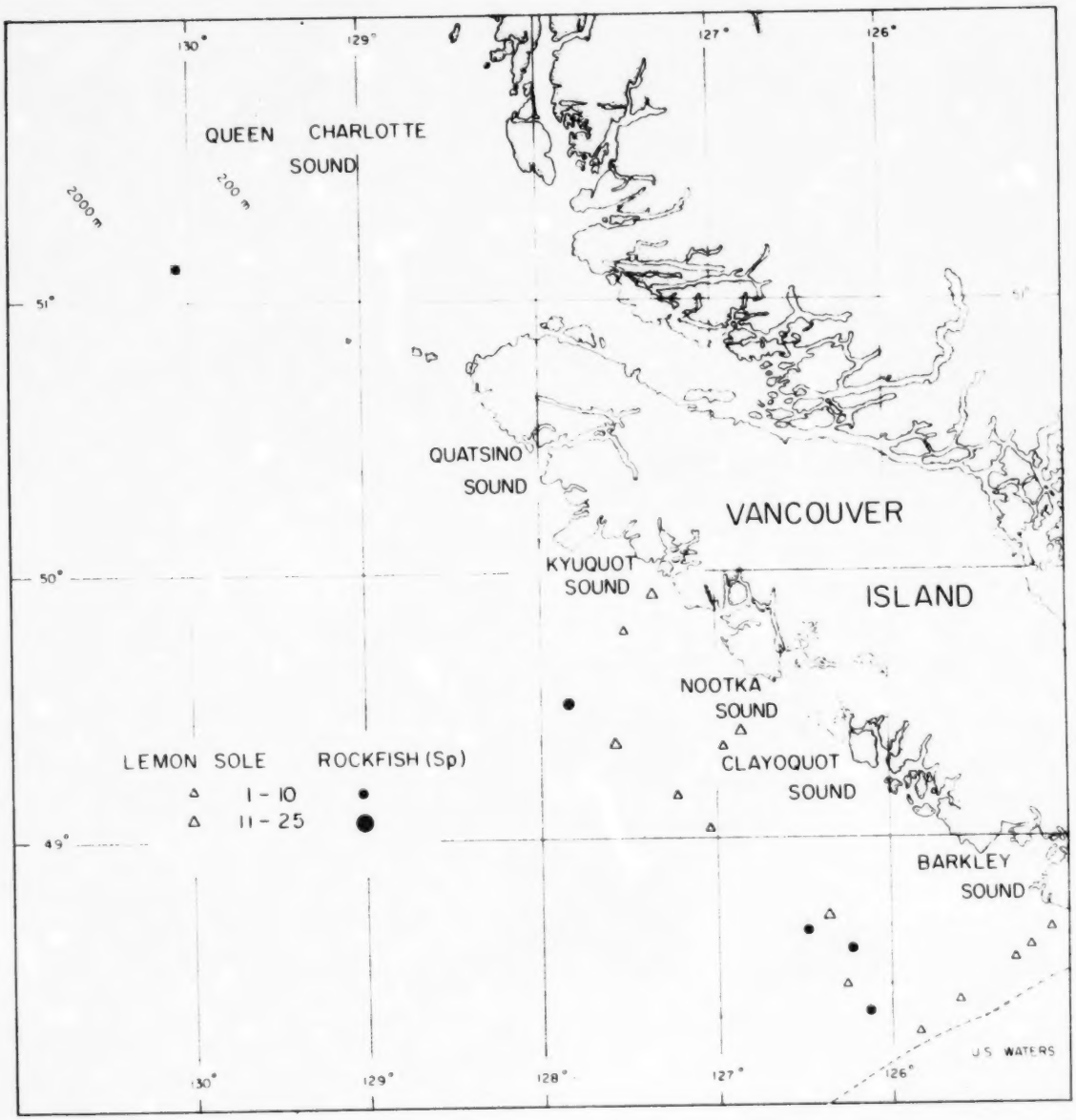

Fig. 5. Distribution of lemon sole and rockfish (sp.) larvae from neuston tows. R/V G.B. REED, April 16 to May 10, 1984. Abundance expressed as numbers per 1000 m^3.